

Can't bawl him out

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→ Courageous in his convictions—  
has led him to pour <sup>his own</sup> money  
into enterprise that seemed  
hopeless to others.

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~~Not a pure scientist,  
Studying the ~~fuzz~~  
on a ~~bee~~. He wanted men  
who not only observed, but made  
their findings the road to something  
of utility to man.~~

~~Edison hard of hearing  
uses telegraph signals  
tapped on his hand -  
is A-I receiver and plug  
sender.~~

~~When did Davy make  
the arc light~~

~~Edison's successes were  
result of experience from  
many failures.~~

~~My first experience in the lab.  
was to short circuit a lamp.~~

~~On Oct. 21, broad daylight  
was thrown on this whole  
<sup>business</sup> subject of electric lighting~~



Early visitors at Philips.

The old farmer - "much obliged" - "did not understand how the kerosene got inside the bottle". He and me old lady visit a daughter in New York. She burns gas. Don't like it - might forget and (puff) blow it out and get <sup>the</sup> house afire. Now me and the old lady lives back here in the country and use kerosene and I don't like that either, for she makes me clean and fix the <sup>new</sup> ~~burning~~ lamps and they are dangerous.

I tell you "Miss" the only safe and good light, is the regular, old tallow candle.

I don't say anything again "Mr. Edison light", it is a fine light, but I prefer the tallow candle every time.

See Edison's remark about only the rich affording to burn tallow candles.



For nearly 9 years bamboo  
filaments were used

375 patents relating to the  
art of incandescent electric  
lighting from 1880 to 1905  
including lamps, generators -  
distributing systems and  
related appliances.

No earlier incandescent lamp  
lasted more than a moment  
or a few hours - all were  
aburdly impracticable  
and contained no underlying  
principles of successful success.

His box of cigars with hair  
and paper - which he  
smoked himself.

No one could bowl him  
out.

No one ever had a bigger  
nerf heap than Edison



~~First were wooden sockets,  
Safety <sup>screw</sup> plugs - see wood -  
shelved, in 1881~~

~~Abstentions in Edison -  
Said in 1910, "Meat eating  
like sleeping is a bad habit  
to indulge. The death rate  
and sickness of the population  
of the country could be reduced  
several percent in the ratio of  
abstinence from animal  
food"~~

~~Great faith in electricity,  
Said in 1910 future. "If I thought that  
the possibilities of electrical  
development were exhausted,  
I should not give it a moment's  
consideration, and went to  
the. Sometimes fathers come to me,  
or write to me, about their  
sons, and want to know if in  
view of the fact that so much  
of the field of work is already  
occupied by electricity, I would  
recommend it as a career.  
It is assumed by them, that all  
the great electrical inventions  
have been made, and that  
nine or ten billions of dollars  
is about all that electricity will  
(over)"~~



stand, in way of investment.  
Well, if I were beginning my  
own career again, I should seek  
no better field in which to  
work. The chances for big  
new electrical inventions are  
much greater than before the  
Telegraph, the Telephone, the  
electric light and the electric  
motor were invented; while  
each of these things is far from  
perfect." And this was  
said just before the appear-  
ance of that great improvement  
in lamps, represented in the  
 Mazda, made possible by  
invention of drawn magnesium  
wire.



"Just wait a little while and we  
will make electric light so  
cheap, that only the wealthy  
can afford to burn candles."

## Meigs Park Economy Test

Aug. 28-29,  
1881

Total length of conductors 39,000 ft.  
Longest dist. from station 3,800 ft.  
Leakage resist. 22 ohms

Emf in system 110 volts

Average "A" 16 c.p. lamp 104.25 watts  
114 ohms

0.915 amps

95.4 watts

per candle - 5.9 "

say 6 watts per horizontal  
C.P.

Lamps on system  
and were the first product  
of the new lamp factory

First commercial  
central station, Aug. 15, 1882,  
"H" machine for 250-100 c.p. lamps,  
at Appleton, Wis.

First lamp factory, Meigs Park,  
about Nov. 1882, as fixed by by-law.

First lighting on big scale, as to  
number of lamps, was at  
Louisville (Ky.) Exposition, 1883,  
with 4600-16 c.p. lamps, floor  
space of 14 acres, which stimulated  
progress more than any other  
event.



Phila. Exposition tests  
1884

Edison lamps at normal  
voltage (about 97) average  
watts per Sphero-cell C.P.,  
about 4.46, resist. about  
139 ohms. <sup>3.7 hours total</sup> ~~Below than~~

Mean useful life about  
1000 hours <sup>Also 3.8 watts per</sup>  
horizontal C.P., <sup>July</sup> 1882

Upton said, as to lamp  
in his parlor, "it ought  
to last forever, a perfect  
varnish, the carbon  
cannot burn or even wear  
out". Fortunately for  
lamp makers, it was  
very soon found that  
they do wear out.

Would you expect sockets,  
plugs, switches, reverb B  
wear out or go wrong where  
would you be. And where  
would your tailor and dress  
maker be, if clothes never worn  
out or changed in style?



~~The 1960 Martin & Dyer  
over 6000 plateaus  
1 billion dollar capital  
41 million lamps on their line  
1/2 " are lamps  
150 thousand reactors  
using 750,000 b.p.  
convector fans, heating and  
cooling devices  
100 thousand isolated plants  
with not less than  
25 million lamps  
150 million lamps assembly  
rooms.~~



## Religion

"After years of searching  
the processes of nature  
I can no more doubt  
the existence of an  
Intelligence that is running  
through things than I do  
of the existence of myself,

## Davy Arc light

Produce a feeble electric  
arc between carbon points  
in 1802 with a weak voltaic  
battery. But in 1810 exhibited  
a powerful brilliant arc  
between carbon pencils or rods  
by use of a powerful battery  
of some 2000 cells.



Fisher

Mr. Fisher

Gen lamps  
1906

2.56 horizontal  
480k. to 80% e.p.

Squirted cellulose

3.1 horizontal  
c.p.  
460k. to 80% e.p.

are general ~~1889~~ 1892

Opium 1905

Tantalum 1906

Sintered tungsten 1907 to 1911

drawn tungsten wire 1911

to 2 watt

Average watts 52.7, or 1.03 watts  
per horizontal c.p.

170,000,000  
annually in U.S.A.

from 10 to 1000 watts  
of which 12.7% are Mazda "C".

20,000,000 Gen and  
squirted in 1918 in  
the U.S.A.

" "  
Mazda "C"

average 0.8 watts per  
horizontal

About 240,000 lamps annually  
of all sizes, large and miniature

Some Mazda "C" lamps of large type  
are about 0.5-1 watts per c.p. or  
slightly higher the majority  
of the squinted are lower.



~~Hotel European branch  
Feb. 1883, 19536 Camp.~~

~~Alpine 11583.  
272 plants in U.S. + Europe  
Total 52,586 Camps.  
taken 8443 in Europe and.~~

~~354 incised leaves, May, 1883  
May 6 65, 145 Camps.~~

~~Dr. Moore M.~~

~~The Museo Park system  
was first started out for  
collecting the Camps system  
it was certainly Grand  
was decided Nov. 1860. Liverpool  
in some way along the same track.  
Edwards' letter of November  
might~~

~~There were a week at  
these.~~

~~I have arrived in the Camp,  
for this is Camp day, but  
Edwards' letter to describe it  
quite like August 1860. To stop  
the Camp, without it being~~

*of English in about  
we are left up the  
course. It is not  
will not report it.*



~~I will give more space  
 to the members of the California  
 Society before you can receive  
 the benefit and point  
 out that the Government  
 was directed on this point  
 make the same thing  
 the members of the  
 the members of the  
 I fear it will change~~

~~They have been sent  
 California, 57 Room 56, N.Y.  
 Address: Box 11, 1482  
 or 1249 South  
 West "Indians"  
 New York address of 1000 West  
 East about 300 West. East~~



"But it is a shame that with the  
immense amount of work  
you have done you haven't  
been able to get any results?"  
"Results? Why, no, I have  
got a lot of results, I  
know several thousand  
things that won't work."

Summer of 1881-

Upton

"Well, Mr. Edison, we com-  
pleted a thousand lamps  
today."

Edison

"Good. In fifteen years you  
will be making forty thousand  
lamps a day!"

40000	300
12,000,000	

Edison - How many lamps  
were made in 1881?



"I never [unclear] you made  
very careful  
Safety Catches and later [unclear] extra  
Edition, used them immediately,  
first as a piece of lead wire  
wound over broken ends of  
the copper conductor.

First to use built-up, [unclear]  
insulation for large [unclear]  
one of first [unclear] with  
bare conductors.

Look up Phila. 1884 Lamp  
Laws for life and economy

First <sup>commercial</sup> installation  
S. S. Columbia - Sailed for  
Portland, Oregon, May, 1880.  
first using 100 p. 100 volt lamps  
of paper carbon, but most bamboo  
carbons - 115 lamps

Wooden pocket lamp sockets without  
fuses. Safety cut-out for each plate  
room lamp, and for each circuit.  
and dynamo. Lead wire in a  
gan tube about 1" long secured  
by wood screws and [unclear].  
July, 1881. First commercial lamp  
installation. Hinds, Ketchikan, [unclear]  
New cards, etc. 442 Water St. N.Y. [unclear]



with confident persistence  
His great success was  
built upon the solid  
bed rock of experience gained  
from failure down to which  
he dug through a great  
depth of failures

The milling \$2,000,000.00  
loss. No complicity of his,  
had ever failed to pay its  
debt, and he did not  
propose to leave this instance  
any exception. He paid  
its debt amounting to several  
hundred thousand.

Sold General Electric  
Stock - Well, it's all gone,  
but we had a hell of a  
good time spending it.

It may be more to reconcile further connection  
however, that it was spent for a high minded  
purpose - not the mere money and security

"He was so slow <sup>in his</sup> ~~that~~ <sup>extraordinary</sup>  
would take him long as long  
to get out of the field of a  
microscope."

50 years old - memory  
gone



I propose to <sup>moderately</sup>  
 Edison is justly a rich man,  
 as the definition <sup>rich man</sup> goes and  
 in comparison with the  
 majority of men, but is  
 not a multi-millionaire  
 by any means. Doubtless, in  
 comparison with the wealth  
 he has added to the world,  
 and improved condition of his age,  
 he has been one of its poorest  
 paid <sup>in money</sup> men in money.

It is questionable, ~~whether~~  
whether ~~the best~~ highest paid of  
~~us~~ here any of us here, if  
~~paid~~ remunerated according to  
~~what we do~~ the result the value  
of our work on the same  
scale as Edison has been ~~paid~~,  
would have enough money  
to pay for <sup>very</sup> one square meal. I think  
about  
any one  
But a greater reward is his—  
the gratitude, the honor and  
respect of everyone; he ~~will~~ <sup>will go</sup> <sup>out</sup> of the world, <sup>one bill</sup> <sup>one bill</sup> greatest creditor,  
who can never be paid in full  
but little in money for which  
his <sup>a</sup> <sup>respecting</sup> memory of him and his  
works will survive through  
long centuries to come. over



In practically all electrical industry, the sound of every groaning ~~the~~ machine, the hum of every wheel, the ring of every hammer, the rasp of the file, the roar of the furnace flame, are in large measure <sup>but</sup> ~~the~~ amplified echoes of the work <sup>that went</sup> ~~going~~ on years ago in Edison's laboratory under his impelling ~~and~~ energy ~~guided~~, by his genius. <sup>directed</sup> ~~directed~~ <sup>as we not forget that</sup> And, ~~we~~, not Edison, are reaping the major return from his labor.

The above comes ahead of matter on other side

be with us, let us hope that Edison ~~may live to see~~ <sup>may live to see</sup> ~~the~~ <sup>the</sup> ~~great~~ <sup>great</sup> ~~unabated~~ <sup>unabated</sup> ~~vigor~~ <sup>vigor</sup> ~~to~~ <sup>to</sup> ~~bring~~ <sup>bring</sup> ~~the~~ <sup>the</sup> ~~anniversary~~ <sup>anniversary</sup> ~~of the~~ <sup>of the</sup> ~~electrical~~ <sup>electrical</sup> ~~industry~~ <sup>industry</sup> ~~in~~ <sup>in</sup> ~~the~~ <sup>the</sup> ~~world~~ <sup>world</sup>

Which there is certainly every reason to believe



Edison has always had  
the benefitting of mankind  
at heart, not the ~~the~~  
benefit that comes from  
charity (a doubtful benefit  
sometimes in many of its  
aspects, and requiring most  
careful application, if not  
to result in more harm  
than good). He has always  
insisted on a fair share  
of remuneration from the  
results of his labors, and  
the benefits to men that  
he <sup>has</sup> used his abilities to cre-  
ate, have been those that  
come from giving employment  
to more hands - that men  
may have more chance to  
work for their own good, thus  
the good of all.

He has a firm faith in  
(over)



at least  
the general goodness of  
mankind, that 95 out  
of 100 of us are honest in  
~~the~~ purpose ~~to~~ <sup>to</sup> ~~honestly~~ fairly  
to earn our living, pay our  
bills, and deal with our  
neighbors and the community  
at large in the same square  
way we wish them to treat  
us; that the lazy, dishonest  
and vicious ~~and~~ <sup>and</sup> con-  
stitute an exceedingly small  
minority of the whole people.

Let us <sup>endeavor</sup> ~~strive~~ to emulate  
Edison in <sup>honest industry</sup> ~~the~~ <sup>his</sup> ~~industry~~, at least,  
and feel with him that ~~we~~  
although we all have some  
of the failings inseparable from  
human nature, as it <sup>is</sup> ~~is~~ <sup>constituted</sup>,  
nevertheless, almost everyone,  
man and woman, is a pretty  
good fellow worth striving  
seriously to get along with, &  
that we may pull together in  
efficient team work for our <sup>collective</sup>  
welfare, <sup>thus our individual</sup>  
~~individually~~ <sup>benefit</sup>.